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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/828,638	04/06/2001	Robert Edward Touhsaent	2001B025/RMH10185(PL00-24	5507

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EXAMINER
AHMED, SHEEBA

ART UNIT	PAPER NUMBER
1773	

DATE MAILED: 09/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

CF -7

Office Action Summary	Application N .	pplicant(s)	
	09/828,638	TOUHSAENT, ROBERT EDWARD	
	Examin r	Art Unit	
	Sheeba Ahmed	1773	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 May 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *5* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Amendment

1. Amendments to claims 1, 2, 15, 16, and 20 have been entered in the above-identified application. **Claims 1-20 are pending.**

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

2. Claims 1-5, 9-11, 15-18, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jensen et al. (US 5,662,985) in view of Curatolo (US 5,804,301) and Houde (US 6,406,775B1).

Jensen et al. disclose a printable facestock structure comprising a polymeric film substrate having on a first surface an adhesive anchor layer and on a second surface an ink base layer wherein the ink base layer may be an iminated polymer of methyl methacrylate, an alkyl acrylate and an ethylenically unsaturated carboxylic acid (Column 1, lines 34-37, lines 44-46 and Column 4, lines 14-67). The coatings are applied to the substrate by any known method and wherein the substrate has been surface treated and primed ***(thus indicating that a primer layer is present between the substrate and the coating layer)*** (Column 9, lines 3-7). The coating is applied in an amount such that it results in a dry evenly distributed coating having a coat weight of 0.9 to 1.1 g/m^2 ***(thus indicating that the dry coating weight is at least 0.1 g/1000 in^2)*** (Column 9, lines 13-14). The coatings may be formulated with solid finely divided inorganic material,

such as colloidal silica, to function as a slip agent ***(thus indicating that the coating comprises dispersed particulates)*** (Column 10, lines 13-16). An adhesive layer ***(corresponding to the optional adhesive layer of claim 20)*** may be positioned adjacent to the adhesive anchor layer (Column 10, lines 24-27). Curatolo, on the other hand, discloses radiation curable compositions, which may be deposited on polymeric films to improve their printability and other surface characteristics (Column 1, lines 5-9). The composition comprises polyfunctional acrylate oligomers such as epoxy acrylates (Column 6, lines 8-21) and imparts improved ink adhesion, chemical resistance, moisture resistance and weathering resistance to the substrates (Column 11, lines 56-64).

Jensen et al. and Curatolo do not teach that the anionic acrylic polymer is crosslinked and specifically crosslinked with a polyfunctional aziridine.

However, Houde discloses compositions that are useful as printing media (Column 1, lines 6-10) and wherein the binder is crosslinked to provide improved abrasion and weather resistance using a polyfunctional aziridine (Column 10, lines 22-25). The polyfunctional aziridine reacts with reactive groups such as carboxylic acids and becomes completely incorporated into the coating without any leaching or out-gassing (Column 11, lines 1-10).

Accordingly, it would have been obvious to one having ordinary skill in the art to crosslink the anionic acrylic polymer, comprising the ethylenically unsaturated carboxylic acid monomer, with a polyfunctional aziridine given that Houde discloses that crosslinking the binder provides improved abrasion and weather resistance and that

polyfunctional aziridine reacts with reactive groups such as carboxylic acids and becomes completely incorporated into the coating without any leaching or out-gassing. With regards to the limitation that the anionic acrylic polymer is crosslinked to an extent sufficient to improve resistance of said coating to isopropyl alcohol and/or hot water, the Examiner takes the position that such a limitation is inherently met by the crosslinked coating taught by Jensen et al. given that the composition of the coating and the composition of the crosslinker as taught by Jensen and Houde is identical to that of the claimed invention. Furthermore, with regards to the limitations that the anionic acrylic polymer is crosslinked by exposure to at least room temperature, the Examiner would like to remind the Applicants that the determination of patentability for product claims containing process limitations is based on the product itself and not on the method of production. If the product is the same or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985) and also see MPEP 2113. In this case, the product (i.e., the printable plastic film, the printable coating composition or the label) is obvious despite the process limitations of crosslinking the anionic acrylic polymer by exposure to at least room temperature.

3. Claims 1, 2, 6-8, 15-18, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jensen et al. (US 5,662,985) in view of Curatolo (US 5,804,301) and Karim (US 5,883,193).

Jensen et al. disclose a printable facestock structure comprising a polymeric film substrate having on a first surface an adhesive anchor layer and on a second surface an ink base layer wherein the ink base layer may be an iminated polymer of methyl methacrylate, an alkyl acrylate and an ethylenically unsaturated carboxylic acid (Column 1, lines 34-37, lines 44-46 and Column 4, lines 14-67). The coatings are applied to the substrate by any known method and wherein the substrate has been surface treated and primed ***(thus indicating that a primer layer is present between the substrate and the coating layer)*** (Column 9, lines 3-7). The coating is applied in an amount such that it results in a dry evenly distributed coating having a coat weight of 0.9 to 1.1 g/m^2 ***(thus indicating that the dry coating weight is at least 0.1 g/1000 in^2)*** Column 9, lines 13-14). The coatings may be formulated with solid finely divided inorganic material, such as colloidal silica, to function as a slip agent ***(thus indicating that the coating comprises dispersed particulates)*** (Column 10, lines 13-16). An adhesive layer ***(corresponding to the optional adhesive layer of claim 20)*** may be positioned adjacent to the adhesive anchor layer (Column 10, lines 24-27). Curatolo, on the other hand, discloses radiation curable compositions, which may be deposited on polymeric films to improve their printability and other surface characteristics (Column 1, lines 5-9). The composition comprises polyfunctional acrylate oligomers such as epoxy acrylates (Column 6, lines 8-21) and imparts improved ink adhesion, chemical resistance, moisture resistance and weathering resistance to the substrates (Column 11, lines 56-64).

Jensen et al. and Curatolo do not teach that the anionic acrylic polymer is crosslinked and specifically crosslinked with an epoxy silane using a catalyst such as imidazole.

However, Karim discloses a thermosettable composition which allows adhesion to be maintained under conditions of high humidity (Column 1, lines 6-8). The composition comprises polymerizable acrylic or methacrylic acid ester, an epoxy resin, a silane coupling agent and an accelerator (Column 1, lines 34-40). Useful silane agents include epoxy silanes used with an imidazole accelerator. Imidazoles are insoluble in the methacrylate and epoxy components and particularly suitable as accelerators because of their ability to extend shelf life of compositions (Column 6, lines 20-26).

Accordingly, it would have been obvious to one having ordinary skill in the art to crosslink the anionic acrylic polymer with an epoxy silane using an imidazole accelerator given that such compositions allow adhesion to be maintained under conditions of high humidity and given that imidazoles are insoluble in the methacrylate and epoxy components and particularly suitable as accelerators because of their ability to extend shelf life of compositions. With regards to the limitation that the anionic acrylic polymer is crosslinked to an extent sufficient to improve resistance of said coating to isopropyl alcohol and/or hot water, the Examiner takes the position that such a limitation is inherently met by the crosslinked coating taught by Jensen et al. given that the composition of the coating and the composition of the crosslinker as taught by Jensen and Karim is identical to that of the claimed invention. Furthermore, with regards to the

limitations that the anionic acrylic polymer is crosslinked by exposure to at least room temperature, the Examiner would like to remind the Applicants that the determination of patentability for product claims containing process limitations is based on the product itself and not on the method of production. If the product is the same or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985) and also see MPEP 2113. In this case, the product (i.e., the printable plastic film, the printable coating composition or the label) is obvious despite the process limitations of crosslinking the anionic acrylic polymer by exposure to at least room temperature.

4. Claims 1, 2, 12-14, 15, 16, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jensen et al. (US 5,662,985) over Houde (US 6,406,775 B1) and Saint Victor (US 6,225,389).

Jensen et al. disclose a printable facestock structure ***(corresponding to the printable plastic film of claim 1 or the label of claim 20)*** comprising a polymeric film substrate ***(corresponding to the substrate layer of the claimed invention)*** having on a first surface an adhesive anchor layer and on a second surface an ink base layer ***(corresponding to the printable coating composition layer of the claimed invention)*** wherein the ink base layer may be an iminated polymer of methyl methacrylate, an alkyl acrylate and an ethylenically unsaturated carboxylic acid ***(corresponding to the iminated anionic acrylic polymer of the claimed invention)*** (Column 1, lines 34-37, lines 44-46 and Column 4, lines 14-67). The coatings are

applied to the substrate by any known method and wherein the substrate has been surface treated and primed ***(thus indicating that a primer layer is present between the substrate and the coating layer)*** (Column 9, lines 3-7). The coating is applied in an amount such that it results in a dry evenly distributed coating having a coat weight of 0.9 to 1.1 g/m^2 ***(thus indicating that the dry coating weight is at least 0.1 g/1000 in^2)*** Column 9, lines 13-14). The coatings may be formulated with solid finely divided inorganic material, such as colloidal silica, to function as a slip agent ***(thus indicating that the coating comprises dispersed particulates)*** (Column 10, lines 13-16). An adhesive layer ***(corresponding to the optional adhesive layer of claim 20)*** may be positioned adjacent to the adhesive anchor layer (Column 10, lines 24-27). Houde, on the other hand, discloses compositions that are useful as printing media (Column 1, lines 6-10) and wherein the binder is crosslinked to provide improved abrasion and weather resistance using a polyfunctional aziridine (Column 10, lines 22-25). The polyfunctional aziridine reacts with reactive groups such as carboxylic acids and becomes completely incorporated into the coating without any leaching or out- gassing (Column 11, lines 1-10).

Jensen et al. and Houde do not teach that the ink base layer further comprises an epoxy acrylate.

However, Saint Victor discloses a substantially zero VOC, water-dispersible coating composition for printing or non-printing purposes and comprising an epoxy acrylate oligomer. The composition significantly reduces the amount of energy and times required to effect curing. The oligomer is formed by reacting an epoxide with an

unsaturated acid such as acrylic or methacrylic acid. Useful epoxides include glycidyl ethers of polyhydric alcohols (Column 2, lines 12-15, 20-24, and 59-67) such as diglycidyl ether of diethylene glycol or dipropylene glycol (Column 4, lines 9-15). The product of the reaction is an epoxy methacrylate compound having a main chain of polyepoxide and both terminals of a methacrylate group (Column 5, lines 25-30). To prevent the premature or undesirable polymerization of the product or the reactants, it is advantageous to add a vinyl inhibitor, such as hydroquinone, to the reaction mixture (Column 6, lines 16-27).

Accordingly, it would have been obvious to one having ordinary skill in the art to add an epoxy acrylate oligomer, formed by reacting an glycidyl ether of diethylene glycol or dipropylene glycol with an unsaturated acid such as acrylic or methacrylic acid, and to add a vinyl inhibitor, such as hydroquinone, to the ink base layer composition disclosed by Jenson et al. given that Saint Victor specifically teaches that their epoxy acrylate has low VOC, is water dispersible and significantly reduces the amount of energy and times required to effect curing and that the hydroquinone prevents the premature or undesirable polymerization of the product or the reactants. With regards to the limitation that the anionic acrylic polymer is crosslinked to an extent sufficient to improve resistance of said coating to isopropyl alcohol and/or hot water, the Examiner takes the position that such a limitation is inherently met by the crosslinked coating taught by Jensen et al. given that the composition of the coating and the composition of the crosslinker as taught by Jensen and Houde is identical to that of the claimed invention.

Furthermore, with regards to the limitations that the anionic acrylic polymer is crosslinked by exposure to at least room temperature, the Examiner would like to remind the Applicants that the determination of patentability for product claims containing process limitations is based on the product itself and not on the method of production. If the product is the same or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985) and also see MPEP 2113. In this case, the product (i.e., the printable plastic film, the printable coating composition or the label) is obvious despite the process limitations of crosslinking the anionic acrylic polymer by exposure to at least room temperature.

Response to Arguments

5. Applicant's arguments with respect to independent claims 1, 15, and 20 have been considered but are moot in view of the new ground(s) of rejection. However, the Examiner will address the Applicants arguments as they apply to the new rejections.

Applicants traverse the rejection of claims 1-5, 9-11, 15-18, and 20 under 35 U.S.C. 103(a) as being unpatentable over Jensen et al. (US 5,662,985) in view of Curatolo (US 5,804,301) and Houde (US 6,406,775B1) and argue that Jensen fails to disclose coatings that contain epoxy acrylate and one skilled in the art would lack incentive to combine Curatolo's composition with that of Jensen's given that Curatolo's compositions already provide improved ink adhesion to a substrate. In response to applicant's argument that there is no suggestion to combine the references, the

Examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Curatolo, specifically teaches radiation curable compositions of epoxy acrylates, which may be deposited on polymeric films to improve their printability, impart improved ink adhesion, chemical resistance, moisture resistance and weathering resistance to the substrates.

Applicants further argue that Curatolo is limited to radiation curable compositions and claims 2 to 14 and 16 to 19 rely upon temperature to effect crosslinking. As pointed out above, the Examiner would like to remind the Applicants that the determination of patentability for product claims containing process limitations is based on the product itself and not on the method of production. If the product is the same or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985) and also see MPEP 2113. In this case, the product (i.e., the printable plastic film, the printable coating composition or the label) is obvious despite the process limitations of crosslinking the anionic acrylic polymer by exposure to at least room temperature.

Applicants argue that Houde teaches away from the present invention given that Houde states in Column 4, lines 32 to 34 that "cationic ionomers are preferred for use in the present invention because the majority of the ink jet printing inks are ionic in nature".

The Examiner takes the position that Houde ***does not teach away*** from crosslinking an anionic acrylic polymer, comprising the ethylenically unsaturated carboxylic acid monomer, with a polyfunctional aziridine. First, the proposed modification or combination does not change the principle of operation of Houde's invention and therefore the teachings of Jensen, Curatolo and Houde are sufficient to render the claims *prima facie* obvious. Second, Houde falls far short of the kind of teaching that would discourage one of skill in the art from crosslinking an anionic acrylic polymer with a polyfunctional aziridine given that Houde specifically discloses that crosslinking the binder provides improved abrasion and weather resistance and that polyfunctional aziridine reacts with reactive groups such as carboxylic acids and becomes completely incorporated into the coating without any leaching or out-gassing.

Applicants traverse the rejection of claims 1, 2, 6-8, 15-18, and 20 under 35 U.S.C. 103(a) as being unpatentable over Jensen et al. (US 5,662,985) in view of Curatolo (US 5,804,301) and Karim (US 5,883,193) and argue that one skilled in the art would not combine Jensen and Curatolo with Karim given that Karim is concerned with the metal to glass adhesive art. In response to applicant's argument that Karim is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Karim is reasonably pertinent to the problem with which

the Applicants are concerned, i.e., Karim discloses a thermosettable composition which allows adhesion to be maintained under conditions of high humidity.

Applicants further traverse the rejection of claims 1, 2, 12-14, 15, 16, and 19 under 35 U.S.C. 103(a) as being unpatentable over Jensen et al. (US 5,662,985) over Houde (US 6,406,775 B1) and Saint Victor (US 6,225,389) and submit that one skilled in the art of ink adhesion would not reply upon Saint Victor's teaching which relate to screen compositions and allow the screen coatings to be washed off by water. Again, the Examiner would like to point out that it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Saint Victor is reasonably pertinent to the problem with which the Applicants are concerned, i.e., the prevention of premature or undesirable polymerization of the product or the reactants which can be obtained by the addition of a vinyl inhibitor, such as hydroquinone, to the reaction mixture.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheeba Ahmed whose telephone number is (703)305-0594. The examiner can normally be reached on Mondays and Thursdays from 8am to 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau can be reached on (703)308-2367. The fax phone numbers for the organization where this application or proceeding is assigned are (703)305-5408 for regular communications and (703)305-3599 for After Final communications.

Sheeba Ahmed
August 26, 2003

Paul Thibodeau
Supervisory Patent Examiner
Technology Center 1700